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Statistical Report of 5700 Cases of Ear Diseases,

Classified by Age, Sex, Occupation and Dis-
ease; Causation.

BY

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STATISTICAL REPORT OF 5700 CASES OF EAR-DISEASES, CLASSIFIED BY AGE, SEX, OCCUPATION AND DISEASE; CAUSATION.

The following statistical tables represent the records of 5,700 cases of diseases of the ear treated during the last eight years at the Illinois Charitable Eye and Ear Infirmary, in Chicago. I have added a relatively small number of unselected cases from the records of my private practice to supply the place of those whose records were incomplete. The purpose for which the classification was begun was to establish a basis of calculation of the influence, if any, exerted by occupation, age or sex in the causation of ear-diseases. The condition of each patient at the time he first presented himself at the clinic was recorded in order to determine the relative frequency of the different diseases.

As is usual in charity hospitals, a very large percentage of those who applied for treatment belonged to that class of laboring people who have no definite trade or fixed occupation. It is interesting, also, to note that the last decade embraced what might be called the vagrant era of the century in this country, for there never was a time in the history of America when such vast numbers of men were unemployed and leading nomadic lives. This may partly account for the fact that about one-third of the adult males are herein classed as being without occupation. In order to facilitate investigation and simplify the tables as far as possible, all those occupations which were closely related to one another in nature and effects were grouped under one heading, so that the twenty-four which appear really represent about double that

number. For example, under the heading of clerks, were embraced salesmen, book-keepers, office employés, etc.; with teamsters were grouped car-drivers, peddlers, etc.; cooks and bakers were classed together; brass-molders, iron-molders, etc., were classified with iron-workers; plumbers, gas- and steam-fitters appear together; such closely allied occupations as stone-cutters, stone-masons, bricklayers and plasterers, in which the influences and exposures are very similar, are grouped together under the head of day laborers—a term borrowed from the laborers themselves.

The abbreviations employed are:

Ac., for acute inflammation of the middle ear.

Ac. S., for acute suppurative inflammation of the middle ear.

C. N., for chronic non-suppurative inflammation of the middle ear.

C. S., for chronic suppurative inflammation of the middle ear.

Ext., for diseases of the external ear.

Int., for diseases of the internal ear.

D. M., for deaf-mutes.

W. No., for whole number.

OCCUPATION.	W.No	Ac.	Ac. S.	C.N.	C. S.	Ext.	Int.
Miners.....	10			6	4		
Firemen.....	10			9	1		
Coopers.....	10	1	3	5	1		
Butchers.....	11	1		6	3	1	
Packing-House laborers	12	1	1	8	2		
Engineers.....	13			10	2		1
Cigar-makers	15	2	1	6	3	3	
Plumbers	16	2	1	7	1	5	
Boilermakers.....	19		3	10	3	3	
Tinners	20	1	4	9	5	1	
Shoemakers.....	22		2	14	1	4	1
Bakers.....	22	1	2	14	4	1	
Printers.....	30		2	10	12	5	1
Tailors.....	31		2	18	8	2	1
Blacksmiths.....	38	1	2	26	3	5	1
Painters.....	47	3	1	26	10	6	1
Sailors.....	47	1	2	28	9	5	2
Railroad laborers.....	58	2	5	35	12	3	1
Farmers.....	74		1	55	18		
Carpenters	80	3	4	57	8	6	2
Iron-workers.....	84	4	4	54	11	10	1
Teamsters.....	85	12	11	33	23	6	
Factory hands.....	108	6	13	59	19	9	2
Clerks.....	232	17	19	117	39	36	4
Day laborers.....	496	27	26	300	77	60	6
TOTAL,	1590	85	109	922	279	171	24

SUMMARY.

	W.No	Ac.	Ac. S.	C. N.	C. S.	Ext.	Int.	D. M
Adult males without occupation.....	810	43	31	485	197	46	7	1
Female adults.....	1662	75	63	1070	317	106	27	4
Boys, 6 to 15 years..	557	35	28	230	205	34	19	6
Girls, 6 to 15 years..	562	32	22	225	232	35	11	5
Boys under 6 years	243	11	21	41	125	26	8	11
Girls under 6 years	276	11	26	45	139	38	9	8
Occupations.....	1590	85	109	922	279	171	24	
TOTAL,	5700	292	300	3018	1494	456	105	35
Per cent. of W.No.		5.1	5.3	53.	26.	8.	2.	.6

The tables show that more than one-half of all the occupations were in-door. Of the 1590 males with fixed occupations, 920 worked out-of-doors and 670 in-doors. Add 1662 female adults who lead in-door lives to the 670 adult males with in-door work, and we have 2332 patients that spend most of their lives within doors. To the 920 men who do out-door labor we may add the 810 adult males who were without trades or any definite means of subsistence, and it gives 1730 men who probably pass most of their days in the open air. Thus the excess of patients of the in-door class over those who lead out-door lives amounts to 602, or about 15 per cent. of the whole number of adults. These facts are significant when we take into account the slight difference between the number of males and females affected under the age of 15 years.

Sex seems to have no influence in the production or prevention of these diseases. It appears from this that up to the age of 15 years ear-diseases afflict both sexes nearly equally. Possibly a reason for the slight difference which appears in the number of male and female cases during the first 15 years of life may be found in the similarity of the lives and habits of the sexes during this early period. But the classes of society that afford clinical material at the medical charity institutions of this country are such

that necessity requires them to abandon the pursuit of education at about the fifteenth year, and to enter upon bread earning vocations. From that time the divergence in habits increases. The males are either out-of-doors more than ever, or confined chiefly to mercantile houses and factories. The females become domestics, clerks and shop-girls.

American residences and business houses are heated in cold weather by dry hot air and kept at a temperature of 70° F., or higher. The inmates are subjected to the action of this dry hot air, often laden with dust and noxious gases, the greater part of every day. The skin, consequently, is very active in its functions, and kept moist by free perspiration. But, though constant exposure renders the soldier, Spartan-like, indifferent to cold and storms, housing the body makes it tender, like the hot-house plant, and sensitive to sudden and extreme changes in the air. After working all a winter-day in a temperature of summer heat, these people, with the powers of resistance reduced by fatigue and hunger, pass out immediately into a frigid atmosphere, with the temperature perhaps from 40° to 70° F. lower than that of the work shop. The skin is chilled, the perspiration checked, and a determination of blood to some internal organ occurs. Naso-pharyngeal catarrh is probably the most frequent consequence. This result is aided by high winds and the inhalation of dust. In fact a very large percentage of naso-pharyngeal catarrhis undoubtedly due to the irritating effects of dust, and this, operating in conjunction with cold damp air, is largely responsible for the wide-spread existence of naso-pharyngeal catarrh among Americans. It is undoubtedly the most prevalent disease in this country. The importance of this fact is obvious when we consider that so large a number of middle-ear affections originate in naso-pharyngeal inflammation which extends from that cavity through the Eustachian tube to the tympanum.

Critical examination of the throat demonstrates the existence of throat-trouble in a large proportion of these cases. Hence, whatever causes a catarrh of the nose and throat is interesting to the otologist as a proximate cause of ear-disease.

The exanthemata are frequent causes of ear trouble during childhood, but youth seems to predispose to coryza which is often a forerunner of tubal and tympanic catarrh. Children under 15 years of age constitute about 28.5 per cent., or more than one-fourth of the whole number of cases. Very many of them dated back to attacks of scarlet fever, measles and the earaches and "running-ears" of infancy, so that a much larger percentage than appears should probably be credited to the period of childhood. Only a small proportion of children were brought for treatment during the acute stage of inflammation. Only 13 per cent. were acute cases, leaving 87 per cent., or more than six times as many who had not applied for treatment until the inflammation had reached a chronic stage. Indeed only 11 per cent. of the adults were seen in the acute stage.

The tables show a large percentage of diseases of the external ear. Since impacted cerumen may be regarded as a symptom and a consequence of chronic non-suppurative inflammation of the middle ear, due consideration should be given this fact in estimating the relative frequency of affections of the middle and of the external ear as shown in these tables.

It may be permissible to cite a few facts that do not appear in the tables, but which, nevertheless, were impressed upon me by a personal study of this class of patients. Although the whole State of Illinois contributed largely to the number embraced by these statistics, a large majority were residents of Chicago, a very cosmopolitan city. The foreign element predominates. The nationalities were not recorded except in resident infirmary cases, but the Irish constituted a very large, and the French a very small

percentage of our clinical material. The North of Europe furnishes a far greater percentage of our population than the Southern portions. After considering the nationalities it will not be surprising when it is stated that the blondes exceed the brunettes in number.

It was observed also that the nervous temperament was the prevailing one. Another matter of interest to the etiologist, and to the student of sociology as well, was the conspicuous absence of baldness among these people, for cold draughts of air on heads deprived of Nature's covering are considered as being a prolific cause of catarrh, by some authorities.

This brings us to a consideration of the last topic of this paper: climatic causes. In speaking of climatic conditions as standing in a causative relation to ear-diseases, it should be understood that reference is had to those atmospheric conditions which are characteristic of Chicago and its vicinity, although they may not be peculiar to it. A sudden great fall of temperature, accompanied with increased humidity of the air, is usually followed by an increase in the number of new patients with acute diseases of the ear, and of chronic cases with acute symptoms. These effects of atmospheric variations occur with such uniformity that we may predict an increase or decrease in the number of acute diseases with a reasonable degree of accuracy by observing the meteorological variations. Our climate is rugged, but the people born and reared in it do not seem to partake of its robust character. The altitude is low in the Mississippi Valley and the thermometric changes are sudden and great. It is not unusual for the thermometer to fall 20° or 30° F., or more, in a few hours. Indeed, cold-waves sweep suddenly over the country in summer time, cooling the heated atmosphere so quickly and so thoroughly that one must needs change from summer to winter clothing with haste or suffer from the chilling winds. Add to these causes of great

circulatory disturbances the irritating effects of constantly inhaled dust, which the ceaseless winds keep in never-ending motion, and the problem of the prevalence of naso-pharyngeal, tubal and tympanic catarrh in our climate is in a great measure solved.

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